

1. The first part of the paper is devoted to the study of the properties of the function $f(x)$ defined by the equation $f(x) = \int_0^x f(t) dt$. It is shown that $f(x)$ is a continuous function and that it satisfies the functional equation $f(x+y) = f(x) + f(y)$. The function $f(x)$ is also shown to be differentiable and its derivative is found to be $f'(x) = f(x)$. This implies that $f(x) = Ce^x$ for some constant C . The value of C is determined by the initial condition $f(0) = 1$, which gives $C = 1$. Therefore, the function $f(x)$ is $f(x) = e^x$.